

Appl. No. 09/937,538
Amdt. Dated March 5, 2004
Reply to Office Action of December 8, 2003

Attorney Docket No. 81839.0102
Customer No.: 26021

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended): A method for evaluating concentration of metal impurities contained in a silicon wafer, which comprises dropping concentrated sulfuric acid onto a surface of the silicon wafer to extract metal impurities solid-solubilized in the inside of the silicon wafer into the concentrated sulfuric acid, and chemically analyzing metal impurities contained in the concentrated sulfuric acid to evaluate concentration of metal impurities contained in the silicon wafer.

2. (Original): The method for evaluating concentration of metal impurities contained in a silicon wafer according to Claim 1, wherein the method for extracting metal impurities solid-solubilized in the inside of the silicon wafer into the concentrated sulfuric acid is performed by dropping concentrated sulfuric acid onto the silicon wafer surface, putting another uncontaminated wafer on the concentrated sulfuric acid on the silicon wafer to hold the concentrated sulfuric acid between the wafers, and subjecting the whole of the wafers in that state to a heat treatment.

3. (Original): The method for evaluating concentration of metal impurities contained in a silicon wafer according to Claim 2, wherein the heat treatment is performed at a temperature in the range of 100°C to 290°C.

4. (Original): The method for evaluating concentration of metal impurities contained in a silicon wafer according to Claim 1, wherein the method of

chemically analyzing metal impurities contained in the concentrated sulfuric acid comprises extracting metal impurities solid-solubilized in the inside of the silicon wafer into the concentrated sulfuric acid, then neutralizing the concentrated sulfuric acid on the silicon wafer by exposing it to an ammonia gas atmosphere, dropping a recovery solution for recovering metals remaining on the silicon wafer onto the wafer surface, running the recovery solution over the wafer surface, recovering the recovery solution and chemically analyzing the recovery solution.

5. (Original): The method for evaluating concentration of metal impurities contained in a silicon wafer according to Claim 4, wherein the recovery solution consists of hydrofluoric acid/aqueous hydrogen peroxide, hydrochloric acid/aqueous hydrogen peroxide, hydrofluoric acid/nitric acid or aqua regia.

6. (Original): The method for evaluating concentration of metal impurities contained in a silicon wafer according to Claim 4, wherein the chemical analysis is frameless atomic absorption spectrometry or inductively coupled plasma mass spectrometry.

7. (Original): The method for evaluating concentration of metal impurities contained in a silicon wafer according to Claim 1, wherein the metal contained in the silicon wafer is Cu.

8. (Original): The method for evaluating concentration of metal impurities contained in a silicon wafer according to Claim 2, wherein the metal contained in the silicon wafer is Cu.

9. (Original): The method for evaluating concentration of metal impurities contained in a silicon wafer according to Claim 3, wherein the metal contained in the silicon wafer is Cu.

10. (Original): The method for evaluating concentration of metal impurities contained in a silicon wafer according to Claim 4, wherein the metal contained in the silicon wafer is Cu.

11. (Original): The method for evaluating concentration of metal impurities contained in a silicon wafer according to Claim 5, wherein the metal contained in the silicon wafer is Cu.

12. (Original): The method for evaluating concentration of metal impurities contained in a silicon wafer according to Claim 6, wherein the metal contained in the silicon wafer is Cu.

13. (Original): The method for evaluating concentration of metal impurities contained in a silicon wafer according to Claim 1, wherein resistivity of the silicon wafer is $1 \Omega \cdot \text{cm}$ or less.

14. (Original): The method for evaluating concentration of metal impurities contained in a silicon wafer according to Claim 2, wherein resistivity of the silicon wafer is $1 \Omega \cdot \text{cm}$ or less.

15. (Original): The method for evaluating concentration of metal impurities contained in a silicon wafer according to Claim 3, wherein resistivity of the silicon wafer is $1 \Omega \cdot \text{cm}$ or less.

16. (Original): The method for evaluating concentration of metal impurities contained in a silicon wafer according to Claim 4, wherein resistivity of the silicon wafer is $1 \Omega \bullet \text{cm}$ or less.

17. (Original): The method for evaluating concentration of metal impurities contained in a silicon wafer according to Claim 5, wherein resistivity of the silicon wafer is $1 \Omega \bullet \text{cm}$ or less.

18. (Original): The method for evaluating concentration of metal impurities contained in a silicon wafer according to Claim 6, wherein resistivity of the silicon wafer is $1 \Omega \bullet \text{cm}$ or less.